



PROJECT PROFILE

Concord Lane Pump Station Belle Vernon, PA

Owner: Rostraver Township Sewage Authority

Engineer: KLH Engineers, Inc.

Contractor: Basic Service Inc.

Overview

Rostraver Township is a rural community in southwestern Pennsylvania consisting of 12,000 residents and several commercial districts. The Township covers 36 square miles and is divided into two (2) major water sheds. These consist of the Pollock Run watershed and the Rehoboth watershed.

Rostraver Township incorporated the Rostraver Township Sewage Authority (RTSA) in 1963 to operate the sewage facilities within the Township. These facilities included the Pollock Run and Rehoboth Valley wastewater treatment plants, six pump stations, and a sanitary sewer system.

Concord Lane Pump Station



Due to increasing pressure from the Pennsylvania Department of Environmental Protection (PA DEP) to mitigate mass on lot sewer failures, to remove several small package plants from the system and to correct an organic overload at the Rehoboth Valley waste water plant, the RTSA commenced planning for an area wide sanitary sewer project in 2002. During the initial planning process, it was determined each water shed would be handled separately.

The RTSA began design of the first phase of the area wide project by constructing sanitary sewers and two (2) pump stations including the Concord Lane Pump Station. During this initial design phase, it was determined that the Rehoboth Valley Wastewater Plant and all flows in the Rehoboth Valley would be conveyed to the Concord Lane Pump Station and ultimately to the Pollock Run Wastewater Plant.

In the final design phase and after site selection, it was determined that a high head and high flow rate pump station would be needed. It was determined the station would need to convey 1000 gpm for initial construction, 1500 gpm for the addition of phase II, and 1800 gpm for build out of both watersheds. To meet these conditions, series pumping was selected with two 1800 gpm submersible pumps in a concrete wet well 35 ft deep pumping to two (2) dry well pumps at 1800 gpm discharging to a 12 inch



force main. The dry well pumps are housed in a pump station building design for aesthetics of the neighboring homes. Each set of pumps are designed to convey all flows with the others serving as full redundant standby. The submersible pumps operate with soft starts and the dry pit pumps



operate on variable frequency drives. All pumping operations are backed up with a 350 KW diesel generator in the event of a power failure.

The pump station was designed to meet multiple flow conditions. Each condition was needed to match phase of buildout in the project. These included the initial flows from phase one, initial flows from phase two, and buildout of both watersheds.



Pump Details

SO# 9811103

Qty-2 Chicago Pump Series 2111, VPM, Model 6415-4A, Rated: 1800 USGPM at 180 ft. TDH

Motor: 125 HP, 1800 RPM, ODP, 405TSC frame, 3/60/460, Inverter Duty

S.O.# 9811104

Qty-2 Chicago Pump Series 2152 Submersible, Model CP6153, 100 HP, 1750 RPM, 360 frame, 3/60/460 Rated: 1800 USGPM at 155 ft. TDH.

Overview and project information courtesy of John C. Mowry, P.E., KLH Engineers, Inc., Pittsburgh, PA